EASTERN ALEUTIAN ISLANDS "DUTCH HARBOR" FOOD AND BAIT HERRING FISHERY

REPORT TO THE BOARD OF FISHERIES

By

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ABSTRACT

The 1990 Dutch Harbor food and bait herring opening date was changed from July 16 to August 15 by the Board of Fisheries. The harvest quota was set at 903 short tons. The fishery started August 15, 1990, at 12:01 AM with seven seiners and eight tenders participating. The fishery closed after twelve hours (12:00 Noon August 15, 1990), with a harvest of 820 short tons. The entire harvest was processed as bait herring. The seven vessels participating in the fishery averaged 117 tons. Five different processing companies purchased the herring.

Key words: Aleutian Islands, herring, catch.

INTRODUCTION

The Eastern Aleutian Islands herring food and bait fishery occurs near Unalaska and Akutan Islands, primarily in the vicinity of Unalaska and Akutan Bays (Figure 1). By regulation, the Bering Sea Management Plan applies to the Unimak, Akutan, and Unalaska Districts, and the Umnak District east of Samalga Pass. This management plan has been in effect since 1981. Historically, the Dutch Harbor Food and Bait fishery occurred from 1929 to 1938 (Table 1).

Historically, the industry was a mixture of gill net and seine gear, holding pounds, and numerous small, shore-based hand packing operations. A large portion of the catch was brined for either food or bait purposes; some product was frozen. Seine gear provided the bulk of the herring harvest. Currently, fishing gear consists of purse seine vessels, which use large seines up to 250 fathoms long and 25 to 35 fathoms deep. The entire 1981 - 1986 harvest was taken by purse seine. One gill net permit holder participated in the 1987 and 1988 season, and two gill net permit holders participated in the 1989 season. Purse seine vessels average about 50 feet in keel length and most also participate in the area M salmon fishery. Fish finding electronics (sonar) aboard these vessels are critical to the fishing operation, much as the airplane is critical to the sac-roe fishery. Generally there is a fairly free exchange of information between all the permit holders involved. Fleet efficiency is also enhanced by its ability to spread out and conduct "sonar searches" over a fairly large area when herring concentrations leave traditional fishing areas.

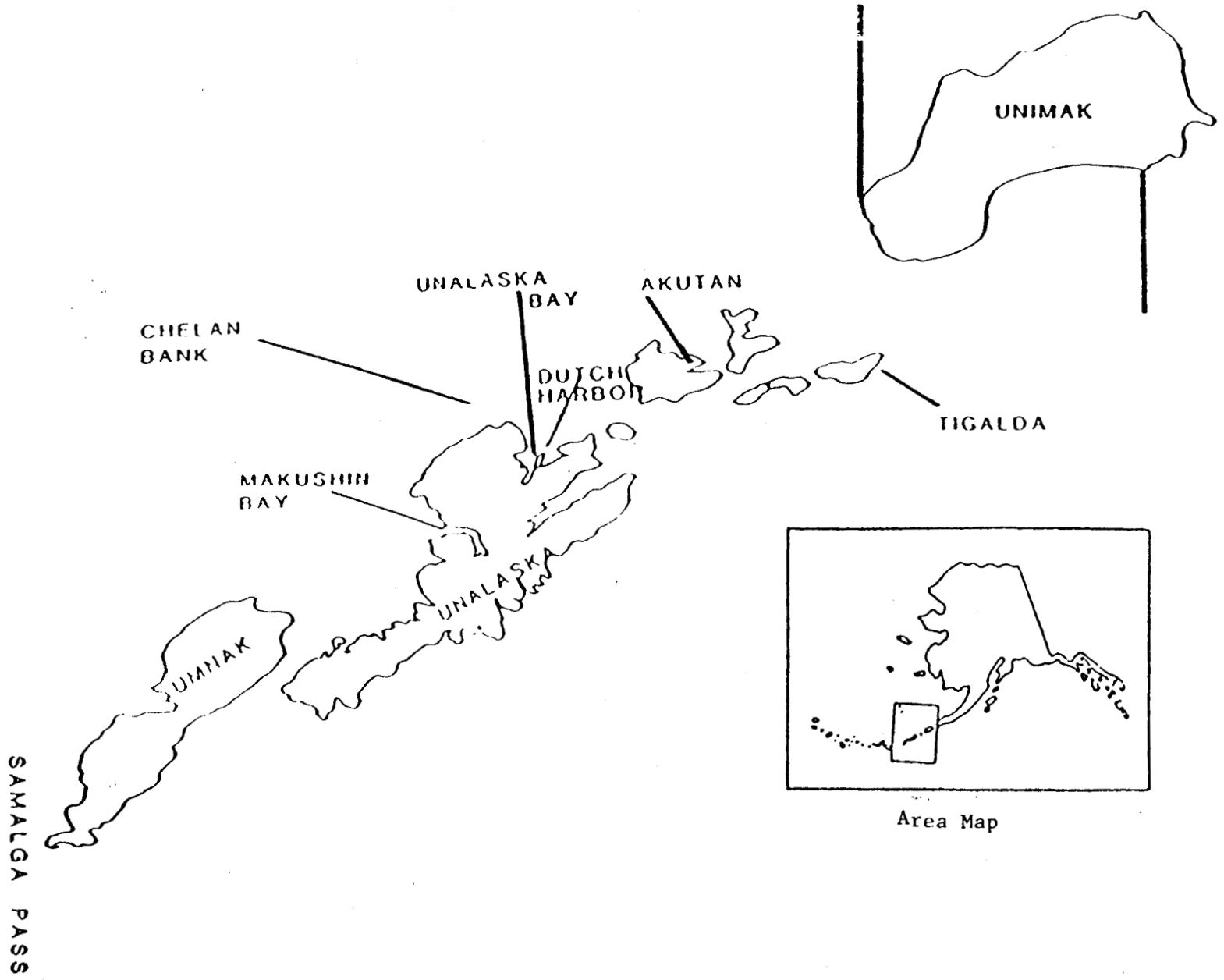

Figure 1. Waters included in the Dutch Harbor herring food and bait fisheries management plan.

Table 1. Peninsula and Aleutian Islands Management Area Eastern Aleutian Islands Herring Food/Bait Fishery Historical Industry Summary By Year, 1929-1990.

Year	Harvest In Short Tons	No. Processors	No. Boats	No. Landings	Tons Per Boat	Tons Per Landing	$ Per Ton	$ Value (Millions)	$ Per Vessel (Millions)
1929	1,259	*	*	*	*	*	*	*	*
1930	1,916	*	*	*	*	*	*	*	*
1931	1,056	12	26	*	*	*	*	*	*
1932	2,510	12	30	*	*	*	*	*	*
1933	1,585	12	38	*	*	*	*	*	*
1934	1,533	9	*	*	*	*	*	*	*
1935	2,412	10	*	*	*	*	*	*	*
1936	1,379	8	*	*	*	*	*	*	*
1937	579	*	*	*	*	*	*	*	*
1938	513	*	*	*	*	*	*	*	*
1939-44	NO FISHERY								
1945	75	*	*	*	*	*	*	*	*
1946-80	NO FISHERY								
1981	704	2	2	16	352	44	300	0.211	0.11
1982	3,565	6	7	95	509	38	300	1.020	0.15
1983	3,567	5	8	96	446	37	232	8.828	0.10
1984	3,578	5	9	61	398	59	210	0.751	0.68
1985	3,480	3	6	78	560	45	162	0.564	0.09
1986	2,394	4	7	53	342	45	254	0.600	0.09
1987	2,503	4	8	45	373	56	300	0.751	0.09
1988	2,004	6	8[a]	59	251	34	252	0.505	0.06
1989	3,081	5	9[b]	69	342	45	283	0.873	0.09
1990	820	5	7	8	117	103	350	0.287	0.04
1929-38 Average	1,474	11	31	*	*	*	*	*	*
1981-90 Average	2,570	5	7	58	369	51	264	1.439	0.15

* Data not available.
[a] Seven seiners and one gill netter participated.
[b] Seven seiners and two gill netters participated.

When herring concentrations leave the usual harvest locations, the industry follows the herring with floating processors and tenders. Processing efficiency and product quality may decline when this occurs. Harvest locations have extended over approximately 90 miles, from Tigalda Island to Makushin Bay (Figure 1). The majority of the harvest, however, has occurred within a five mile radius of shore-based processing facilities in Unalaska and Akutan Bays.

Two similarities between the current and historical fisheries are the quality problems associated with feeding herring and the availability of herring. Feed problems were overcome in the historical fishery by the use of holding pounds, where seine caught herring were held until their stomachs became empty. Gill net caught herring required special handling to prevent spoilage. In the current fishery, the use of shaved ice and super-chilled seawater in conjunction with rapid processing alleviates most of the feed related problems. When feeding conditions are severe, the processors have suspended buying. Historically, (1929-1938), the availability of herring was categorized into an early summer run (late June to late July) and a late summer run (late August to early September). This pattern does not seem to apply in the current fishery (1981-1990), as herring have been harvested from July 16 through September 15.

Shore-based processors purchase the majority of the herring harvested. Floating processors have been used each year; however, they are limited by daily handling capacities, which are considerably less than that of the shore-based plants. All of the processors associated with the herring fishery have floating processors and are diversified into bottomfish, salmon, halibut, black cod, scallops, and the Bering Sea and Peninsula crab fisheries. In 1988, some

herring were tendered to the King Cove shore plant, and in 1989 and 1990 to the Sand Point shore plant.

The values shown in Table 1 represent estimates of total ex-vessel value. Generally, the ex-vessel value for bait herring has exceeded that for food herring. Industry information indicates that foreign food markets currently have multiple sources of herring from European and Canadian stocks which have been cycling high in recent years. While Eastern Aleutian food herring are a suitable and desirable product, an ample and more reliable supply of food herring from other countries currently dominates the market. The bait product from this fishery has a more stable market which is used locally and in other fishing ports of Alaska for the longline and crab fisheries. Bait demands have been increasing in recent years and a premium price is placed on quality bait which is fresh and has high oil content. Overall, the ex-vessel value of bait herring has remained more stable than that for food.

HARVEST STRATEGY

The harvest strategy of the Dutch Harbor food and bait herring fishery has evolved since it was re-established in 1981 (Table 2). During the 1981 and 1982 seasons, there were no harvest restrictions. From 1983 to 1985 the Board of Fisheries implemented a harvest ceiling of 3,527 tons per year due to biological concern over multiple exploitation on Eastern Bering Sea spawning stocks, specifically the Bristol Bay, Nelson Island, and Port Moller stocks. Scale pattern analysis studies identified these stocks as comprising the

Table 2. Dutch Harbor Food and Bait Herring Fishery (Short Tons), 1981-1990.

Year	Preseason Togiak Spawning Biomass	Harvest Quota	Food and Bait Harvest	% Spawning Biomass Harvested
1981	159,000	NONE	704	.4
1982	98,000	NONE	3,565	3.6
1983	142,000	3,525[a]	3,567	2.5
1984	115,000	3,525	3,578	3.1
1985	132,000	3,525	3,480	2.6
1986	96,000	2,453[a]	2,394	2.5
1987	88,000	2,332[b]	2,503	2.8
1988	132,000	3,100[c]	2,004	1.6
1989	100,108	3,100[c]	3,081	3.0
1990	72,000	903[c]	820	1.1
Average	113,411	2,808	2,570	23.2

[a] Harvest ceiling of 3,525 established by Board of Fisheries.
[b] Harvest quota set by ADF&G. Reduced proportionate with the drop from the 1985 Togiak spawning biomass level.
[c] Harvest quota set under provisions of the Bering Sea Herring Fisheries Management Plan.

Eastern Aleutian herring biomass. The extensive sac-roe fisheries occurring on these stocks coupled with the food and bait fishery on different proportions of these same stocks creates an element of biological concern and possible exploitation above the board's 20% guideline policy. In 1986, a modification of the harvest ceiling was implemented by the Alaska Department of Fish and Game in response to the Board of Fisheries concern for the possible diminishing nature of the contributing stocks (primarily Togiak, to which the bulk of the Eastern Aleutian catch is estimated to be comprised). Concern was triggered by a possible lack of recruitment in the spawning stocks. The 1986 harvest allocation in the Eastern Aleutians was reduced by 30% (2,453 ton limit). This reduction was commensurate with the percentage reduction of the observed available Togiak spawning biomass between the springs of 1985 and 1986. The 1987 harvest allocation was 2,332 tons, which was in line with the 1985 to 1987 reduction on observed Togiak spawning biomass.

In 1988, the Alaska Board of Fisheries implemented a Bering Sea Herring Fisheries Management Plan, which established criteria for calculating the Dutch Harbor food and bait quota.

To ensure the conservation of herring stocks, the board adopted a requirement that the overall exploitation of a herring stock should not exceed 20% of the spawning biomass. In the case of the Togiak spawning stock, an allocation between the sac-roe fishery, spawn on kelp fishery, and the Dutch Harbor food an bait fishery was established so that the catch did not exceed 20% of the observed spawning biomass. The number of fishermen involved and the value of the fishery were factors considered by the Board when it made the allocations.

The Bering Sea Management Plan defines under what conditions and to what extent there will be a Dutch Harbor food and bait fishery. The elements governing the food and bait fishery are listed below:

1. The Dutch Harbor food and bait fishery quota is determined through the following calculations:

   A. The desired exploitation rate (maximum of 20%) is applied to the estimated Togiak spawning biomass. This figure represents the total combined allowable harvest to be extracted by the Togiak sac-roe fishery, spawn on kelp fishery, and the Dutch Harbor food and bait fishery.

   B. The spawn on kelp fishery is allocated 1,500 tons of herring.

   C. The Dutch Harbor fishery is allocated 7% of the remaining allowable harvest (after the 1,500 ton spawn on kelp allocation has been subtracted from the total allowable harvest).

   D. The Togiak herring sac-roe harvest allocation is the remainder of the total allowable harvest after the spawn on kelp and Dutch Harbor allocation have been subtracted.

2. If the herring sac-roe harvest in the Togiak District exceeds its allocation by more than 20%, the department shall deduct the amount of herring that exceeds the Togiak District herringsac-roe allocation from the Dutch Harbor fishery allocation for that season.

3. If the Togiak District herring sac-roe fisheries do not harvest their allocation, the unharvested amount of herring will be added to the Dutch Harbor fishery allocation. When an increase of the Dutch Harbor fishery allocation is made under this section, the total allocated harvest may not exceed 3,100 short tons.

4. When the Togiak District spawning stock is below its threshold (35,000 tons), the Dutch Harbor fishery will be closed for that season.

1990 FISHERY

Using the newly adopted Bering Sea Herring Management Plan and the revised Togiak spawning biomass, a preseason harvest quota of 903 short tons was calculated for the Dutch Harbor herring fishery:

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 72,008 Estimated 1990 Togiak Spawning Biomass
 x  20% Desired Exploitation

 14,400 Total Allowable Harvest
- 1,500 Spawn on Kelp Allocation

 12,900 Tons Remaining Allowable Harvest
 x   7%

    903 Dutch Harbor Food and Bait Fishery
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The fishery was opened by regulation (the Board of Fisheries changed the opening date from July 16 to August 15) to continuous fishing at 12:01 AM August 15, with seven seine vessels and eight tenders participating. Five companies were registered to buy herring.

Herring were accessible for harvest on August 15, and the entire fleet found a large school of herring at Cape Cheerful while en route to Makushin Bay. By 9:00 AM, August 15, the fleet had an estimated 940 tons seined up or on board tenders. It was decided to close the fishery at 12:00 Noon, August 15, 1990 (Table 3) in order to prevent over harvesting the allocation. After editing fish tickets, the total catch was 820 short tons, leaving 83 tons unharvested. By the time all fish tickets were received in the Dutch Harbor office, the herring fleet had departed for other fisheries and the balance of the quota (83 tons) was not attained. The entire harvest was processed as bait herring.

Fishermen were paid $350.00 per ton making the ex-vessels value of the fishery at $287,000.00.

Herring quality was good and they were a desirable size. The herring averaged about one pound and were twelve to fourteen inches in length.

MANAGEMENT PLAN REVIEW AND 1991 HARVEST PROJECTIONS

The current management plan, adopted in 1988, generated food and bait allocations of 1,700 tons in 1988 and 1,300 tons in 1989. In both years the allocation was increased to

Table 3. Alaska Peninsula/Aleutian Islands Management Area Eastern Aleutians Herring Food/Bait Fishery Harvest Dates By Year, 1981-1990

Year	Landing Date		Days Fished	Seine Vessels	Total Harvest
	First	Last			
1981	8/03	8/23	21	2	704
1982	8/05	9/12	39	6	3,565
1983	7/23	9/06	46	5	3,567
1984	7/17	7/27	11	5	3,578
1985	7/17	8/11	26	3	3,480
1986	7/16	7/28	13	4	2,394
1987	7/16	7/23	4[a]	9[b]	2,503
1988	7/16	9/18	21	8[b]	2,004
1989	7/16	8/05	19[c]	9[d]	3,081
1990	8/15	8/15	0.5	7	820
Average			20	6	2,570

[a] Closed 7/19, reopened for 14 hours on 7/23.
[b] Includes one gill netter.
[c] Closed 7/26, reopened 7/27 until August 5.
[d] Includes two gill netters.

3,100 tons because the allowable Togiak sac-roe harvest was not taken. In 1990, the allowable Togiak sac-roe harvest was attained, therefore the allocation remained at 903 tons.

Based on the projected 1991 Togiak spawning biomass of 54,772 tons the Dutch Harbor food and bait quota will be 662 tons. However, this figure could change if the biomass projection is inaccurate or if the desired 1991 sac-roe harvest is not achieved.